BlackBerry

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BlackBerry is a line of wireless mobile devices developed by Canadian company Research In Motion (RIM). While including smartphone applications (address book, calendar, to-do lists, etc.) as well as telephone capabilities on newer models, the BlackBerry is primarily known for its ability to send and receive e-mail wherever it can access a wireless network of certain cellular phone carriers. It commands a 20.8% share of worldwide smartphone sales, making it the second most popular platform after Nokia's Symbian,[2] and is the most popular smartphone among business users.[3]

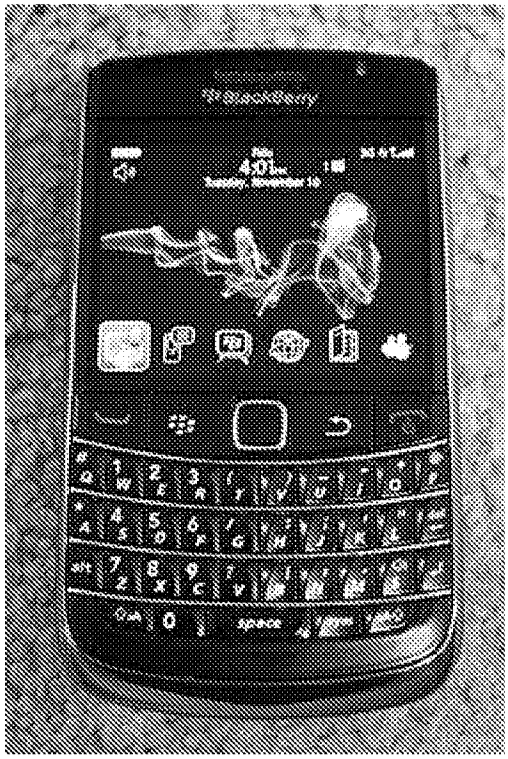
The first BlackBerry device was introduced in 1999 as a two-way pager. In 2002, the more commonly known smartphone BlackBerry was released, which supports push e-mail, mobile telephone, text messaging, Internet faxing, Web browsing and other wireless information services. It is an example of a convergent device.

BlackBerry first made headway in the marketplace by concentrating on e-mail. RIM currently offers BlackBerry e-mail service to non-BlackBerry devices, such as the Palm Treo, through the BlackBerry Connect software. The original BlackBerry device had a monochrome display, but all current models have color displays.

Most current BlackBerry models have a built-in QWERTY keyboard, optimized for "thumbing", the use of only the thumbs to type, and there are also several models that include a standard cell phone keypad for typing, and two models that are full touch-screen devices with no physical keyboard. System navigation is primarily accomplished by a scroll ball, or "trackball" in the middle of the device, older devices used a track wheel on the side and newer devices like the Blackberry Bold 9700 or Curve 8520/8530 use a small pad for navigation "trackpad" instead of a trackball. Some models (currently, those manufactured for use with iDEN networks such as Nextel and Mike) also incorporate a Push-to-Talk (PTT) feature, similar to a two-way radio.

Modern GSM-based BlackBerry handhelds incorporate an ARM 7 or 9 processor, while older BlackBerry 950 and 957 handhelds used Intel 80386 processors. The latest GSM BlackBerry models (8100, 8300 and 8700 series) have an Intel PXA901 312 MHz processor, 64 MB flash memory and

BlackBerry



Screen	480 × 360 pixels (Curve 8900/Tour 9630/Bold 9700) 360 × 480 pixels (Storm) 480 × 320 pixels (Bold) 320 × 240 pixels (8300/8700 /8800/8500 Series) 240 × 260 pixels (7100/8100 Series) 240 × 320 pixels (8200 Series) 65,000 colors
Default ringtone	Polyphonic, MP3, MIDI
Memory	64 MB to 1 GB dependent upon model
Networks	GSM850/900/1800/1900 GPRS/EDGE/UMTS CDMA/1xEV-DO iDEN

16 MB SDRAM.[4] CDMA BlackBerry smartphones are based on Qualcomm MSM6x00 chipsets which also include the ARM 9-based processor and GSM 900/1800 roaming (as the case with the 8830 and 9500) and include up to 256MB flash memory.[5][6]

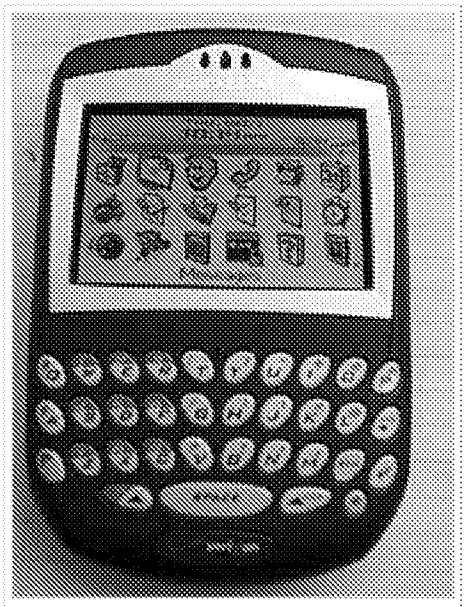
Connectivity	microSD, USB, Bluetooth, WiFi, GPS
Physical size	50 mm × 106.7 mm × 14.5 mm[1]
Weight	87.9 g to 155 g dependent upon model

Contents

Operating system

Main article: BlackBerry OS

RIM provides a proprietary multi-tasking operating system (OS) for the BlackBerry, which makes heavy use of the device's specialized input devices, particularly the scroll wheel (1999–2006) or more recently the trackball (September 12 2006–present) and trackpad (September 2009-present). The OS provides support for Java MIDP 1.0 and WAP 1.2. Previous versions allowed wireless synchronization with Microsoft Exchange Server's e-mail and calendar, as well as with Lotus Domino's e-mail. The current OS 4 provides a subset of MIDP 2.0, and allows complete wireless activation and synchronization with Exchange's e-mail, calendar, tasks, notes and contacts, and adds support for Novell GroupWise and Lotus Notes.


BlackBerry 7250

Third-party developers can write software using these APIs, and proprietary BlackBerry APIs as well, but any application that makes use of certain restricted functionality must be digitally signed so that it can be associated to a developer account at RIM. This signing procedure guarantees the authorship of an application, but does not guarantee the quality or security of the code.

At present, there are few (if any) reports of Blackberry devices being infected by computer viruses; the heavily-encrypted nature of Blackberry data transmission would seem to have prevented virus propagation thus far.

CPU

Early BlackBerry devices used Intel-80386-based processors.[7] The latest BlackBerry 9000 series is equipped with Intel XScale 624 MHz CPU,which makes the fastest BlackBerry to date. Earlier BlackBerry 8000 series smartphones, such as the 8700 and the Pearl, are based on the 312 MHz ARM XScale ARMv5TE PXA900. An exception to this is the BlackBerry 8707 which is based on the 80 MHz Qualcomm 3250 chipset; this was due to the ARM XScale ARMv5TE PXA900 chipset not supporting 3G networks. The 80 MHz Processor in the BlackBerry 8707 actually meant the device was often slower to download and render web pages over 3G than the 8700 was over EDGE networks.

Supporting software

BlackBerry Enterprise Server

BlackBerry handhelds are integrated into an organization's e-mail system through a software package called "BlackBerry Enterprise Server" (BES). Versions of BES are available for Microsoft Exchange, Lotus Domino and Novell GroupWise. Google has made a Connector for BES which makes BES available for Google Apps as well. While individual users may be able to use a wireless provider's e-mail services without having to install BES themselves, organizations with multiple users usually run BES on their own network. Some third-party companies provide hosted BES solutions. Every BlackBerry has an ID called BlackBerry PIN, which is used to identify the device to the BES.

BES can act as a sort of e-mail relay for corporate accounts so that users always have access to their e-mail. The software monitors the user's local "inbox", and when a new message comes in, it picks up the message and passes it to RIM's Network Operations Center (NOC). The messages are then relayed to the user's wireless provider, which in turn delivers them to the user's BlackBerry device.

This is called "push e-mail," because all new e-mails, contacts and calendar entries are "pushed" out to the BlackBerry device automatically, as opposed to the user synchronizing the data by hand or on a polling basis. Blackberry also supports polling email, which is how it supports POP. Device storage also enables the mobile user to access all data offline in areas without wireless service. As soon as the user connects again, the BES sends the latest data.

An included feature in the newer models of the BlackBerry is the ability for it to track your current location through trilateration. One can view the online maps on the phone and see current location denoted by a flashing dot. However, accuracy of BlackBerry trilateration is less than that of GPS due to a number of factors, including cell tower blockage by large buildings, mountains, or distance.

BES also provides handhelds with TCP/IP connectivity accessed through a component called "Mobile Data Service - Connection Service" (MDS-CS). This allows for custom application development using data streams on BlackBerry devices based on the Sun Microsystems Java ME platform.

In addition, BES provides network security, in the form of Triple DES or, more recently, AES encryption of all data (both e-mail and MDS traffic) that travels between the BlackBerry handheld and a BlackBerry Enterprise Server.

Most providers offer flat monthly pricing for unlimited data between BlackBerry units and BES. In addition to receiving e-mail, organizations can make intranets or custom internal applications with unmetered traffic.

With more recent versions of the BlackBerry platform, the MDS is no longer a requirement for wireless data access. Beginning with OS 3.8 or 4.0, BlackBerry handhelds can access the Internet (i.e. TCP/IP access) without an MDS - previously only e-mail and WAP access was possible without a BES/MDS. The BES/MDS is still required for secure e-mail, data access, and applications that require WAP from carriers that do not allow WAP access.

BlackBerry Internet Service

The primary alternative to using BlackBerry Enterprise Server is to use the BlackBerry Internet Service. It was developed primarily for the average consumer rather than for the business consumer. This service allows POP3 and IMAP email integration for the personal user. It allows up to 10 email accounts to be accessed, including many popular email accounts such as Gmail, Hotmail, Yahoo and AOL. There are also special bundles for just Myspace, Facebook, & MSN as well.

BlackBerry Desktop Redirector

A less common alternate to using BlackBerry Enterprise Server is to use the BlackBerry Desktop Redirector. This software is installed on a desktop computer that has the Enterprise email client installed.

Supported software

Further information: BlackBerry App World

BlackBerry Messenger

Newer BlackBerry devices use the proprietary BlackBerry Messenger, also known as BBM, software for sending and receiving text messages via BlackBerry PIN or barcode scan. There is also the BlackBerry Alliance program of partners who work under contract with Research In Motion to create new BlackBerry applications.

Typical applications include digital dictation, GPS tracking, CRM and expense management. On October 6, 2009 BlackBerry Messenger 5.0 was officially released, adding a whole new set of features, including bar code scanning to add contacts, profiles, sharing your location via GPS, and creating groups.

Third-party software available for use on BlackBerry devices includes full-featured database management systems, which can be used to support customer relationship management clients and other applications that must manage large volumes of potentially complex data.[8]

Future features

- On September 11, 2008 Tivo and Research in Motion announced that soon TiVo users would be able to control their system from a BlackBerry phone. The integration was expected by the end of 2008. No price—if any—was disclosed.[9]
- On November 9, 2009 Research in Motion announced that OpenGL ES and the Flash platform will be available on BlackBerry devices.

Nicknames

The ability to read e-mail that is received in real time, anywhere, has made the BlackBerry devices infamously addictive, earning them the nickname "CrackBerry," a reference to the freebase form of cocaine known as crack, which is also highly addictive. Use of the term CrackBerry became so widespread that in November 2006 Webster's New World College Dictionary named "crackberry" the "New Word of the Year".[10]

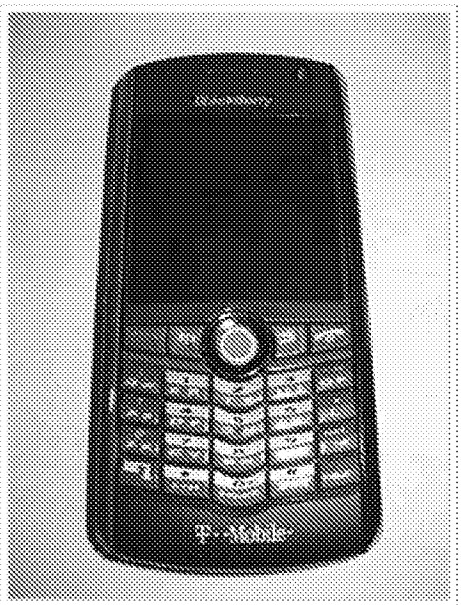
When coupled with Boost Mobile service, the smart phones are sometimes referred to as "BoostBerry." [*citation needed*]

Many users also refer to BlackBerry smart phones in general simply as "berries", spawning a litany of offshoots. For example, "berry thumb" or "berry blister" is the soreness that occurs from handling the keyboard.

Models

Main article: List of BlackBerry products

- Early Pager Models: 850, 857, 950, 957
- Monochrome Java-based Models: 5000-series and 6000-series
- First Color Models: 7200-series, 7500-series and 7700-series
- First SureType Phone Models: 7100-series
- Modern BlackBerry Models (2006 - 2008): 8000-8830-series including: BlackBerry 8800, BlackBerry Pearl, Pearl Flip and BlackBerry Curve
- Latest BlackBerry Models (2008 - 2009): 8900+ GPS WiFi Series: BlackBerry Bold (9000), BlackBerry Curve 8900, BlackBerry Tour (9630), BlackBerry Storm (9500/9530)
- BlackBerry Storm 2 (9520/9550) (2009): BlackBerry Storm 2 [11]
- BlackBerry Bold 2 (2009): BlackBerry 9700 (9700 / Bold 2) [12]



A BlackBerry Pearl 8100

Phones with BlackBerry e-mail client

Several non-BlackBerry mobile phones have been released featuring the BlackBerry e-mail client which connects to BlackBerry servers. Many of these phones have full QWERTY keyboards

- AT&T Tilt Operates on 3G/HSDPA/850/900/1800/1900 MHz GSM network, 240 x 320 pixel touch screen, QWERTY keyboard
- HTC Advantage X7500
- HTC TyTN Operates on 3G/HSDPA/850/900/1800/1900 MHz GSM network, 240 × 320 pixel touch screen, QWERTY keyboard
- Motorola MPx220 (selected models only), Operates on 850/900/1800/1900 MHz GSM network, 176 × 220 pixel screen
- Nokia 6810 Operates on 900/1800/1900 MHz GSM network, 128 × 128 pixel screen
- Nokia 6820 Operates on 900/1800/1900 MHz GSM network, American variant on 850/1800/1900 GSM network, 128 × 128 pixel screen
- Nokia 9300 Operates on 900/1800/1900 MHz GSM network, 128 × 128 and 640 × 200 pixel screen
- Nokia 9300i Operates on 900/1800/1900 MHz GSM network, 128 × 128 and 640 × 200 pixel screen
- Nokia 9500 Operates on 900/1800/1900 MHz GSM network, 128 × 128 and 640 × 200 pixel screen
- All Nokia E-Series phones (Excluding the Nokia E71 and Nokia E66 models)
- Qtek 9100 Operates on 850/900/1800/1900 MHz GSM network, 240 × 320 pixel touch screen and QWERTY keyboard
- Qtek 9000 Operates on 3G-UMTS/850/900/1800/1900 MHz GSM network, 640 × 480 pixel touch screen, QWERTY keyboard
- Samsung t719 Operates on 850/900/1800/1900 MHz GSM network, 176 × 220 pixel screen
- Siemens SK65, Operates on 900/1800/1900 MHz GSM network, 132 × 176 pixel screen
- Sony Ericsson P910 Operates on 900/1800/1900 MHz GSM network, American and Chinese variants on 850/1800/1900, 208 × 320 pixel screen
- Sony Ericsson P990
- Sony Ericsson M600i
- Sony Ericsson P1

BlackBerry PIN

BlackBerry PIN is an eight character hexadecimal identification number assigned to each BlackBerry device. PINs cannot be changed manually on the device (though Blackberry technicians are able to reset or update a

PIN server-side), and are locked to each specific Blackberry. BlackBerrys can message each other using the PIN directly or by using the Blackberry Messenger application.

Certification

- BCESA (BlackBerry Certified Enterprise Sales Associate, BCESA40 in full) is a BlackBerry Certification for professional users of RIM (Research In Motion) BlackBerry wireless e-mail devices.

The Certification requires the user to pass several exams relating to the BlackBerry Device, all its functions including Desktop software and providing technical support to Customers of BlackBerry Devices.

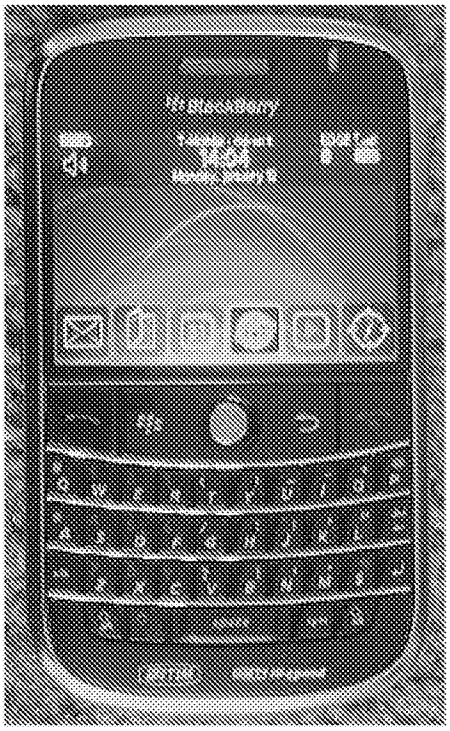
The BCESA, BlackBerry Certified Enterprise Sales Associate qualification, is the first of three levels of professional BlackBerry Certification.

- BCTA (BlackBerry Certified Technical Associate)
- BlackBerry Certified Support Associate T2

Additional information on certifications can be found on the Blackberry.com website (http://na.blackberry.com/eng/support/programs/training.jsp#tab_ddetail_subtab_cert) .

The BlackBerry Technical Certifications available are:

- BlackBerry Certified Enterprise Server Consultant (BCESC)
- BlackBerry Certified Server Support Technician (BCSST)
- BlackBerry Certified Support Technician (BCST)



A BlackBerry Bold.

The BlackBerry Store

In December 2007 , it was reported that the first ever BlackBerry store was opened. While it is the only BlackBerry store currently in existence, it actually is not the first. There were three prior attempts at opening BlackBerry stores in Toronto, London, and Charlotte,[13] but they eventually folded.[14] The current location is in Farmington Hills, Michigan. The store offers BlackBerry device models from AT&T, T-Mobile, Verizon, and Sprint, the major U.S. carriers which offer smartphones. Employees are trained not only on the BlackBerry devices themselves, but on the regulations of each service provider. There´s also a non-offical **BlackBerry** Store called BlackStore in Caracas, Venezuela, because of the big popularity that has the BlackBerry brand in Venezuela, especially in Caracas, making Venezuela one of the biggest **BlackBerry** consumers in the World.

RIM patent infringement litigation

In 2000, NTP sent notice of their wireless email patents to a number of companies and offered to license the patents to them. NTP brought a patent infringement lawsuit against one of the companies, Research In Motion, in the United States District Court for the Eastern District of Virginia. This court is well known for its strict adherence to timetables and deadlines, sometimes referred to as the "rocket docket," and is particularly efficient at trying patent cases.[15]

The jury eventually found that the NTP patents were valid, that RIM had infringed them, that the infringement had been "willful", and that the infringement had cost NTP $33 million dollars in damages (the greater of a reasonable royalty or lost profits). The judge, James R. Spencer increased the damages to $53 million as a punitive measure because the infringement had been willful. He also instructed RIM to pay NTP's legal fees of $4.5 million and issued an injunction ordering RIM to cease and desist infringing the patents. This would have shut down the BlackBerry systems in the US.[16]

RIM appealed all of the findings of the court. The injunction and other remedies were stayed pending the outcome of the appeals.

In March 2005 during the appeals process, RIM and NTP tried to negotiate a settlement of their dispute. One of the terms of the settlement was to be for $450 million. But negotiations broke down due to other issues. On June 10, 2005 the matter returned to the courts.

In early November, 2005 the US Department of Justice filed a brief requesting that RIM's service be allowed to continue because of the large number of BlackBerry users in the US Federal Government.[17]

In January 2006, the US Supreme Court refused to hear RIM's appeal of the holding of liability for patent infringement, and the matter was returned to a lower court. The previously granted injunction preventing all RIM sales in the US and use of the BlackBerry device might have been enforced by the presiding district court judge had the two parties not been able to reach a settlement.

On February 9, 2006, the US Department of Defense (DOD) filed a brief stating that an injunction shutting down the BlackBerry service while excluding government users was unworkable. The DOD also stated that the BlackBerry was crucial for national security given the large number of government users.

On February 9, 2006, RIM announced that it had developed software workarounds that would not infringe the NTP patents, and would implement those if the injunction was enforced.

On March 3, 2006, after a stern warning from Judge Spencer, RIM and NTP announced that they had settled their dispute. Under the terms of the settlement, RIM has agreed to pay NTP $612.5 million (USD) in a “full and final settlement of all claims.” In a statement, RIM said that “all terms of the agreement have been finalized and the litigation against RIM has been dismissed by a court order this afternoon. The agreement eliminates the need for any further court proceedings or decisions relating to damages or injunctive relief.” The settlement amount is believed low by some analysts, because of the absence of any future royalties on the technology in question.[18]

See also

- Research In Motion
- DataTAC
- Mobile Internet Device (MID)
- Personal communicator
- Personal digital assistant (PDA)
- Smartphone
- Tablet PC
- Ultra-Mobile PC
- Triangulation
- Science and technology in Canada
- Blackberry thumb
- BlackBerry Planet

Notes

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4. ^ See BlackBerry 8700c Technical Specifications (http://www.blackberry.com/products/pdfs/blackberry8700c_ent.pdf)
5. ^ About Qualcomm - Qualcomm CDMA Technologies (http://www.cdmatech.com/products/msm6550_chipset_solution.jsp)
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External links

- Official website (http://www.blackberry.com)